

FORMALITIES

The Applicant brings to the Examiner's attention that since issuance of the Office Action two (2) Information Disclosure Statements ("IDS") were filed on April 13 and May 18 and receipt at the Patent Office was acknowledged by date-stamped return receipt postcard on April 15 and May 20, respectively. The Applicant respectfully requests that the Examiner consider the references provided with the two IDS's before issuance of the next office action.

REMARKS

Claims 7-10, 17-20, and 31-38 are pending in the present application. Claims 1-6, 11-16, and 21-30 have been canceled. Claims 7-10 and 17-20 stand rejected under 35 USC §102(b). Claims 31-38 have been newly added. Claims 7 and 17 have been amended.

The Applicant appreciates the Examiner's thorough examination of the subject application and respectfully request reconsideration of the subject application based on the above amendments and the following remarks.

35 U.S.C. § 102(b) REJECTIONS

The Examiner has again rejected claims 7-10 and 17-20 under 35 USC § 102(b) as being anticipated by U.S. Patent Number 5,173,792 to Matsueda ("Matsueda" or the "Matsueda Reference"). The Applicant respectfully traverses these rejections for the reasons provided below.

Claims 7-10 and 17-20

The present invention corrects a leak defect when one of the two electrodes is shorted to an auxiliary capacitance electrode or source wiring. The defect is corrected by cutting off the coupling portion or the branch coupling portion connected to the shorted electrode using a laser and electrically disconnecting, i.e., isolating, the shorted electrode from the pixel electrode. When the laser cuts off the coupling portion (or the branch coupling portion) and the shorted electrode is electrically disconnected (isolated) from the pixel electrode, the other electrode is still connected to the pixel electrode and the pixel stays connected to the drain electrode. As a result, leak defects can be readily corrected between the auxiliary capacitor and the drain electrode and also between the source wiring and the drain electrode, normalizing the pixel. See, e.g., Specification, page 11, lines 2-21.

More specifically, referring to FIG. 4, when the auxiliary capacitance electrode 11a is shorted to the connection electrode 5a of the drain electrode 5, causing a leak between the auxiliary capacitance electrode 11a and the connection electrode 5a, a laser is shone onto the drain thin line portion 31 between the drain electrode 5 and the connection electrode 5a to cut off the electrode 5 from electrode 5a at the exposed portion 34a. Further, a laser is shown onto the pixel electrode 7 on the contact hole 6a connected to the connection electrode 5a to remove the region 7a. Thus, the leak between the auxiliary capacitance electrode 11a and the branch-side connection electrode 33 of the drain electrode 5 is stopped. In this situation, the branch-portion storage capacitance 13c between the branch-side connection electrode 33 and the auxiliary capacitance electrode 11a holds electric charge. Providing a sufficiently large capacitance 13c enables normalization of the pixel.

Similarly, when the auxiliary capacitance electrode 11a is shorted to the branch-side connection electrode 33 of the drain electrode 5, causing a leak between the auxiliary capacitance electrode 11a and the branch-side connection electrode 33, a laser is shone onto the drain branch thin line portion 32 between the drain electrode 5 and the branch-side connection electrode 33 to cut off the electrode 5 from branch-

side connection electrode 33 at the exposed portion 34b. Further, a laser is shown onto the pixel electrode 7 on the contact hole 6d connected to the branch-side connection electrode 33 to remove the region 7b. Thus, the pixel is normalized. See, e.g., Id., page 44, line 25 to page 47, line 48; page 48, line 9 to page 49, line 12. Thus, the leak between the auxiliary capacitance electrode 11a and the connection electrode 5a of the drain electrode 5 is stopped.

Claims 7 and 17 have been amended to recite that, the pixel electrode 7 is connected to the drain electrode 5 through the connection electrodes disposed at two different portions of the drain electrode extension. See, e.g., Specification, FIG. 4. Matsueda, however, merely teaches connecting the pixel electrode 141 to the drain electrode 144 at a single location, which is remote from the connection electrodes 170A, 170B, and 170C that produce storage capacitors with the auxiliary capacitance electrode 160. See, Matsueda, FIG. 11.

Claims 31-38

According to the present invention, leakage can be corrected by isolating either of the electrodes 5a or 33 from the drain electrode 5 by cutting one of the drain thin line portion 31 or the drain branch thin line portion 32 and, further, by isolating the electrode 5a or 33 from the pixel electrode 7 by electrically separating the connection electrode 5a or the branch-side connection electrode 33 from the pixel electrode 7 on the short circuit side. Specifically:

in the liquid crystal display panel 30 of the liquid crystal display device, when either one of the two connection electrode 5a and the branch-side connection electrode 33, and the auxiliary capacitance electrode 11a are short-circuited, a leak defect can be mended by laser-cutting either the drain thin line portion 31 or the drain branch thin line portion 32 leading to the connection electrode 5a or the branch-side connection electrode 33 on the short-circuited side off, and further, by electrically separating the connection electrode 5a or the branch-side connection electrode 33 on the short-circuited side from the pixel electrode 7.

Specification, page 48, lines 9-20 (Emphasis added). Thus, the invention as claimed prevents leakage using two cutoffs that separate either of the connection electrodes 5a and 33 from both the drain electrode 5 and the pixel electrode 7.

The Matsueda reference, however, does not teach, mention or suggest providing two cutoffs to prevent leakage. According to Matsueda,

[w]hen either TFT 140A and 140B is to be electrically isolated due to a defect, the cutoff is accomplished at position 154 or position 155, as the case may be, and, correspondingly, a storage capacitor that is likewise to be electrically isolated, the cutoff is accomplished at position 151, 152, or 153, as the case may be, via laser trimming or other such known treatment.

Matsueda, col. 15, lines 62-68. Matsueda merely discloses an arrangement where short-circuited electrodes 170A, 170B and 170C are isolated using a single cut-off at 151, 152 and 153, respectively. Isolation of a short-circuited electrode does not affect the direct connection between the drain electrode 144 and the pixel electrode 141.

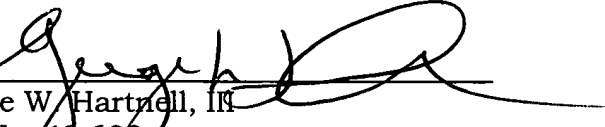
Accordingly, it is respectfully submitted that, the rejected claims are not anticipated and/or made obvious by the Matsueda reference, and further, satisfy all of the requirements of 35 U.S.C. 100, et seq., especially § 102(b). Accordingly, claims 7-10, 17-20, and 31-38 are allowable. Moreover, it is respectfully submitted that the subject application is in condition for allowance. Early and favorable action is requested.

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If for any reason a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge or credit Deposit Account No. **04-1105.**

Respectfully submitted,

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